INSTITUTE OF MICROBIAL TECHNOLOGY
BIOINFORMATICS CENTRE
DR. G.P.S RAGHAVA LAB
www.imtech.res.in/raghava/

Mycobacterium Tuberculosis Database Management Software (*MycoTB*) User Manual

Dr. G.P.S Raghava and the *MycoTB* team

May 13, 2010

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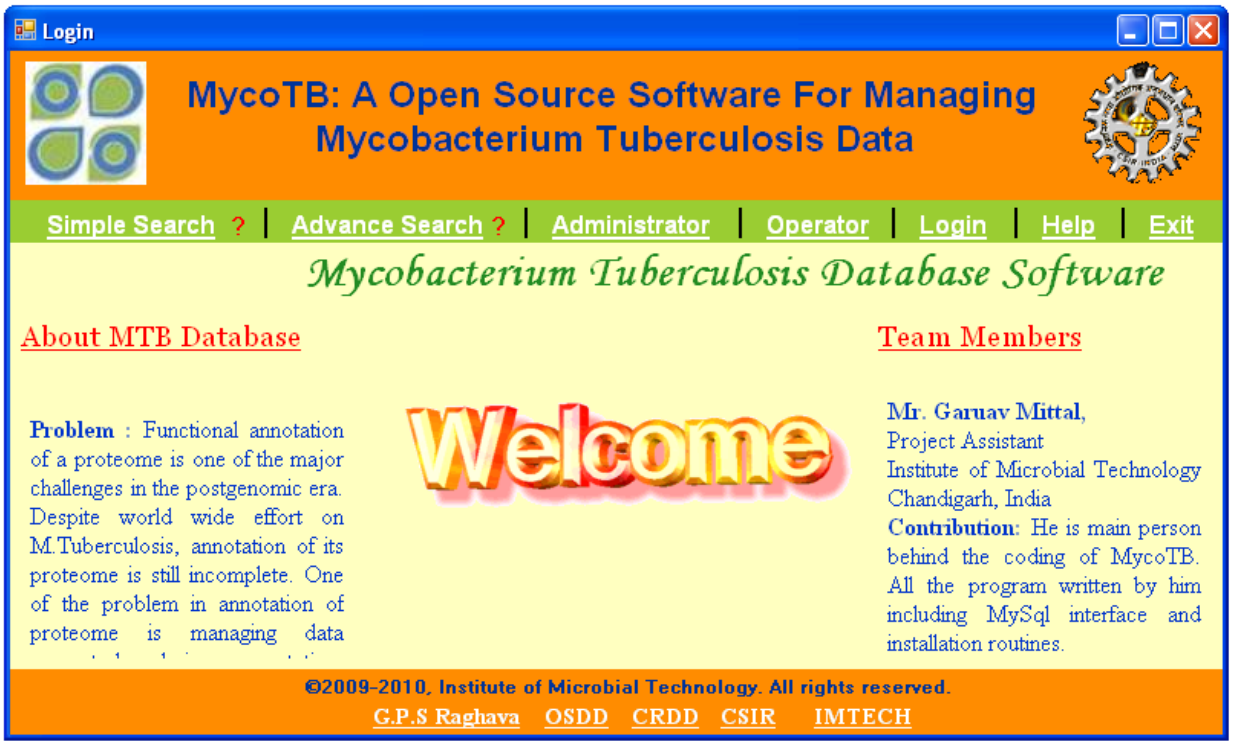
1. Welcome Page

MycoTB Database software has successfully installed in your computer. Then "**MycoTB Shortcut**" in your computer's Desktop. Double click on the "**MycoTB Shortcut**" and welcome Page will come.


Login
MycoTB: A Open Source Software For Managing Mycobacterium Tuberculosis Data
Simple Search ? | Advance Search ? | Administrator | Operator | Login | Help | Exit
Mycobacterium Tuberculosis Database Software
About MTB Database
Team Members
Problem : Functional annotation of a proteome is one of the major challenges in the postgenomic era. Despite world wide effort on M.Tuberculosis, annotation of its proteome is still incomplete. One of the problem in annotation of proteome is managing data
Welcome
Mr. Garuav Mittal,
Project Assistant
Institute of Microbial Technology
Chandigarh, India
Contribution: He is main person behind the coding of MycoTB. All the program written by him including MySql interface and installation routines.
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G.P.S Raghava OSDD CRDD CSIR IMTECH

a) Simple Search:- 'Simple Search' is use for Demo of 'Advance Search'. when you does not have the user name and password for this project.'Simple search' is simiarly to the 'advance search' but user can not store his query permanently for the future use.when user generate query then we give the name to that query is call 'SET'.

b) Advance Search:- When you have user name and password then use the 'Advance Search'.user can store their 'SET' for future use and generate further single 'SET' between two or more than two 'SET'. Click on the 'Login' menu and fill the user name,password,select category and do login.

c) Administrator:- Administrator have the full control on the database. Admin can Manage table,Manage table's record,Manage user and backup & restore database etc.But Admin do Login first with his user name, password and category admin.

d) Operator:- Operator have the limitation control on the database. He can only insert and update the record in table.But opearator do Login first with his user name, password and category operator.

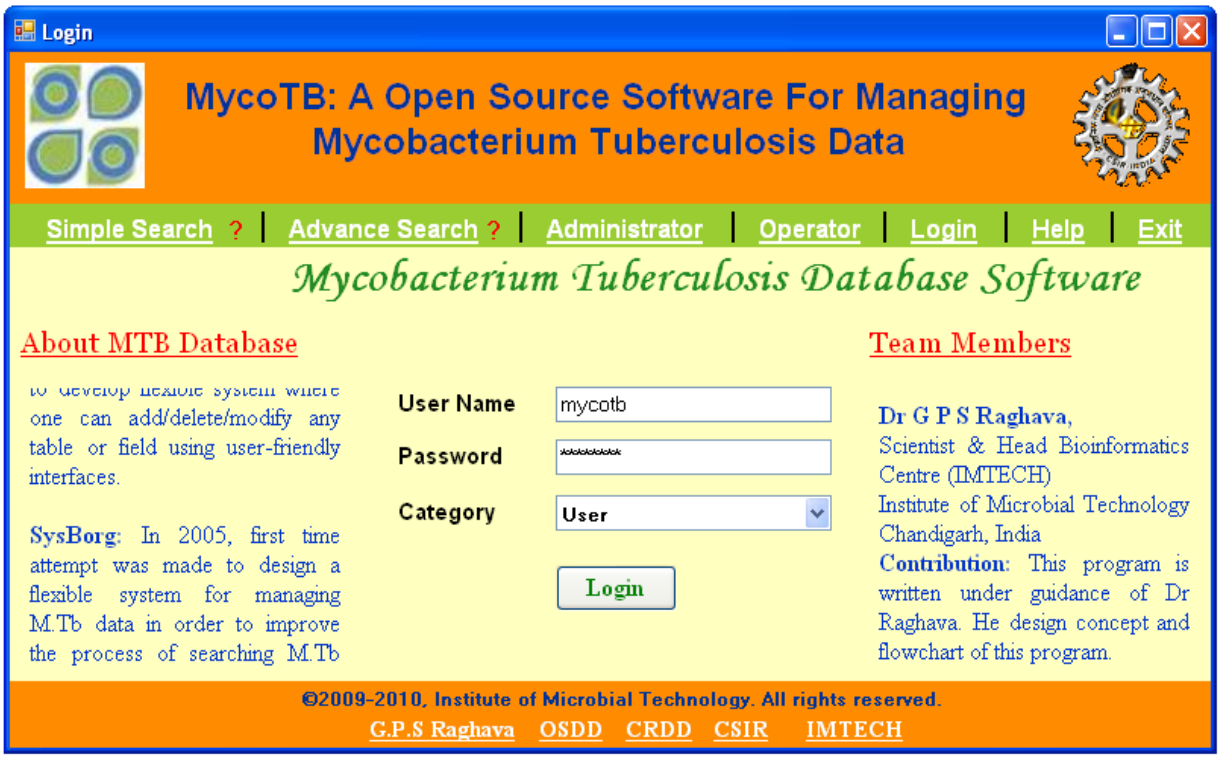
e) Login:- 'Login' menu is use for security purpose. only Register admin,user and operator can use this database.

f) Help:- If you have not user name and password. you are contact to Administrator and take his user name and password.

g) Exit:- if you want to exit this software then click on the 'Exit' menu.

2. Login Page

When you click on the '**Login**' Menu. This window will come and user is fill his user name, password & category and click on the 'Login' button.


Login
MycoTB: A Open Source Software For Managing Mycobacterium Tuberculosis Data
Simple Search ? | Advance Search ? | Administrator | Operator | Login | Help | Exit
Mycobacterium Tuberculosis Database Software
About MTB Database
one can add/delete/modify any table or field using user-friendly interfaces.
SysBorg: In 2005, first time attempt was made to design a flexible system for managing M.Tb data in order to improve the process of searching M.Tb
User Name
mycotb
Password
Category
User
Login
Team Members
Dr G P S Raghava,
Scientist & Head Bioinformatics Centre (IMTECH)
Institute of Microbial Technology
Chandigarh, India
Contribution: This program is written under guidance of Dr Raghava. He design concept and flowchart of this program.
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Default login names:

By Default Administrator Name: admin
Password: a4321
Category: Admin

By Default Operator Name: entry
Password: e4321
Category: Operator

By Default User Name: mycotb
Password: m4321
Category: User

Important:
You can change their password when you will do login.

3. User Category

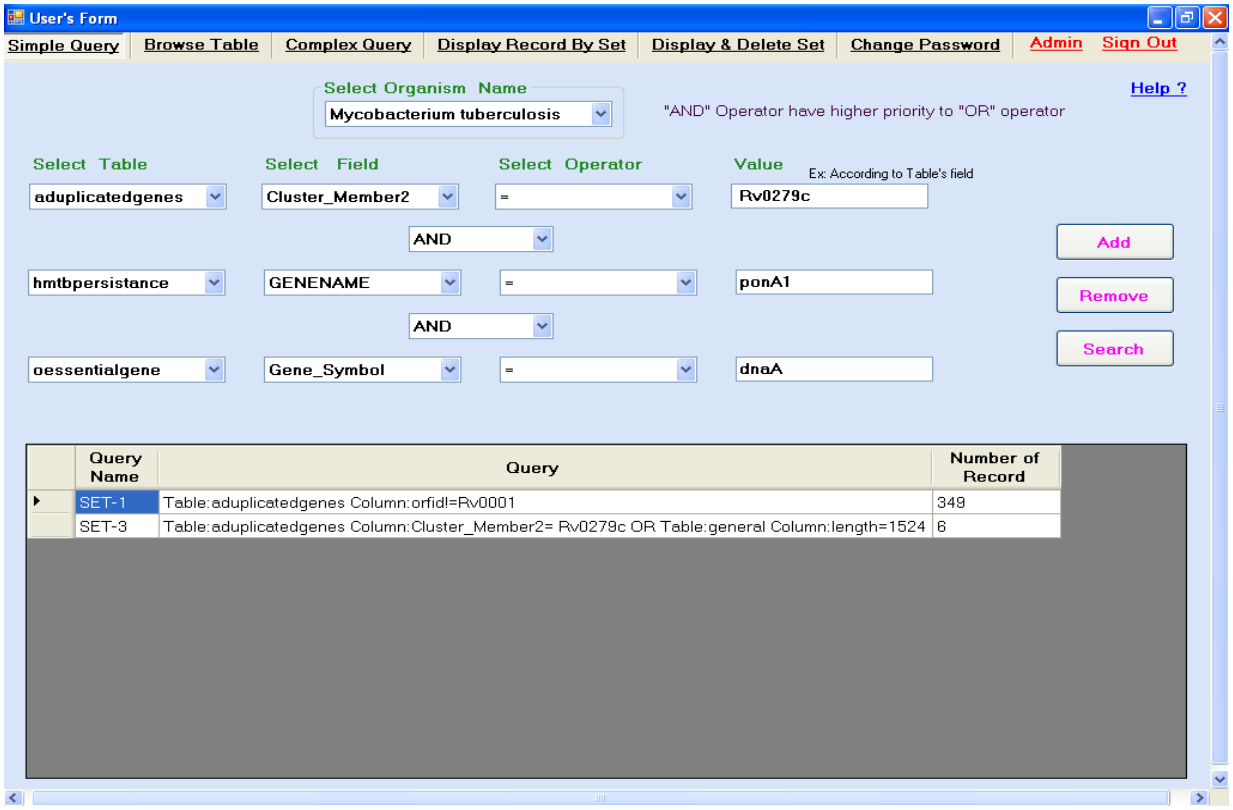
3.1 Simple Query

When User has login and Click on the '**Simple Query'** Menu. This window will come. You can filter the record from one or more than one table in single Organism Name.

Firstly you will select the organism name then all tables will come in 'Select Table' dropdown list according to the organism name. When you select table then table's field will coming in 'Select Field' dropdown list. If table's field type is character then 'equal to (=)' and 'not equal to(!=)' operator will come in the 'Select Operator' dropdown list otherwise 'equal to(=)','not equal to(!=)','less than(<)','less than equal to(<=)','greater than(>)' and 'greater than equal to(>=)' operator will come in the 'Select Operator' dropdown list. When you select table field then first value of this field will come in the 'Value' textbox. You change the value of 'Value' textbox to their according. If you find the record according to this query then click on "search" button otherwise you want merge new query to this query then click on the 'Add' button and repeat above process and so on.

If you click on the 'Search' button means your query is complete. **We gives name to that query is 'SET-1'.Query name cannot be repeat and change.**

'AND' operator have higher priority to 'OR' operator means if single 'SET' have more than one 'AND' & 'OR' operator then 'AND' operator between two query execute first to 'OR' operator between two query.

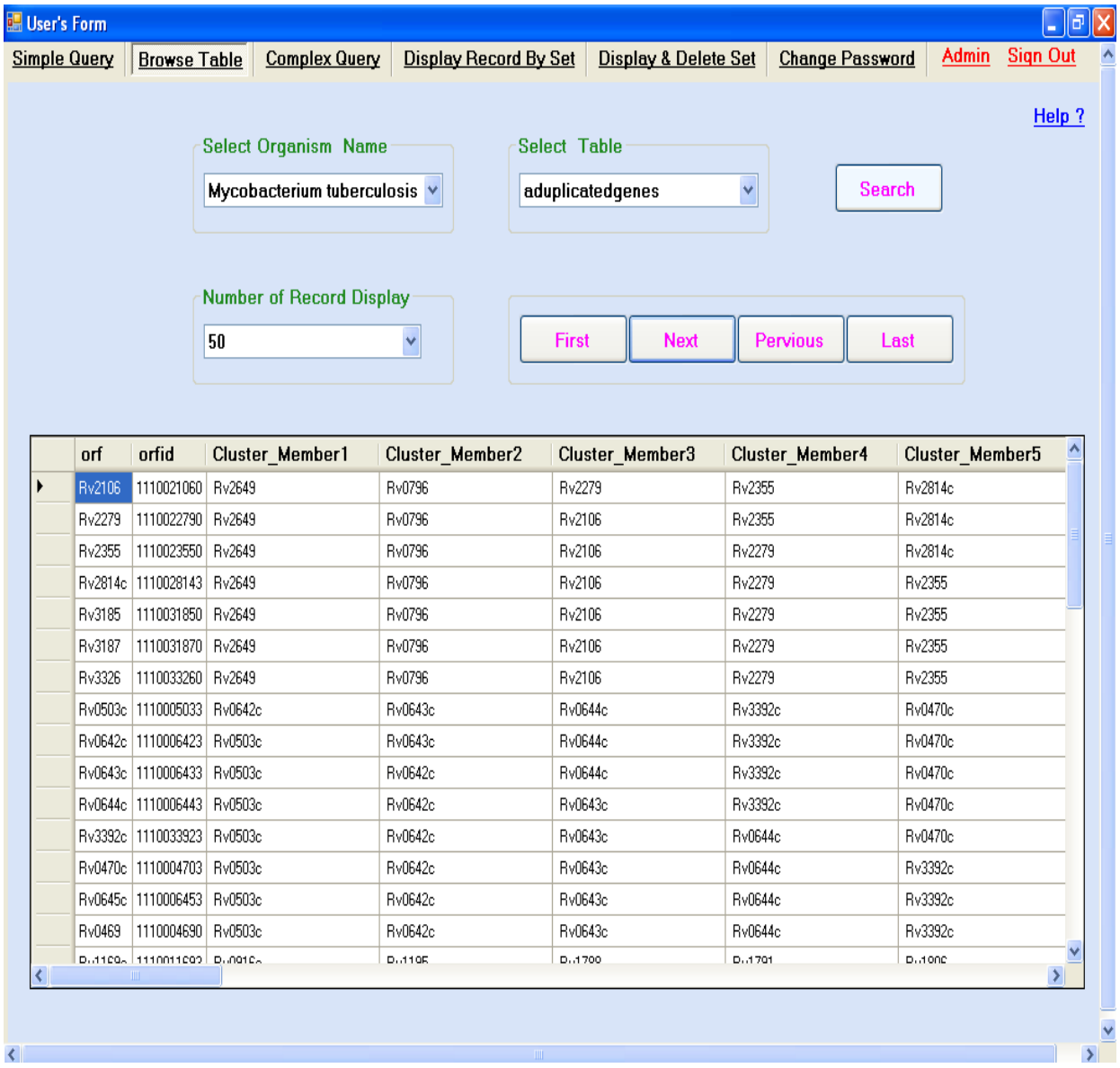


3.2 Browse Table

Click on '**Browse Table'** Menu. This window will come. You can display the table's record.

Select the organism name then table will come in 'Select Table' dropdown list then click on the "Search" button. Table's record will come below in table format.

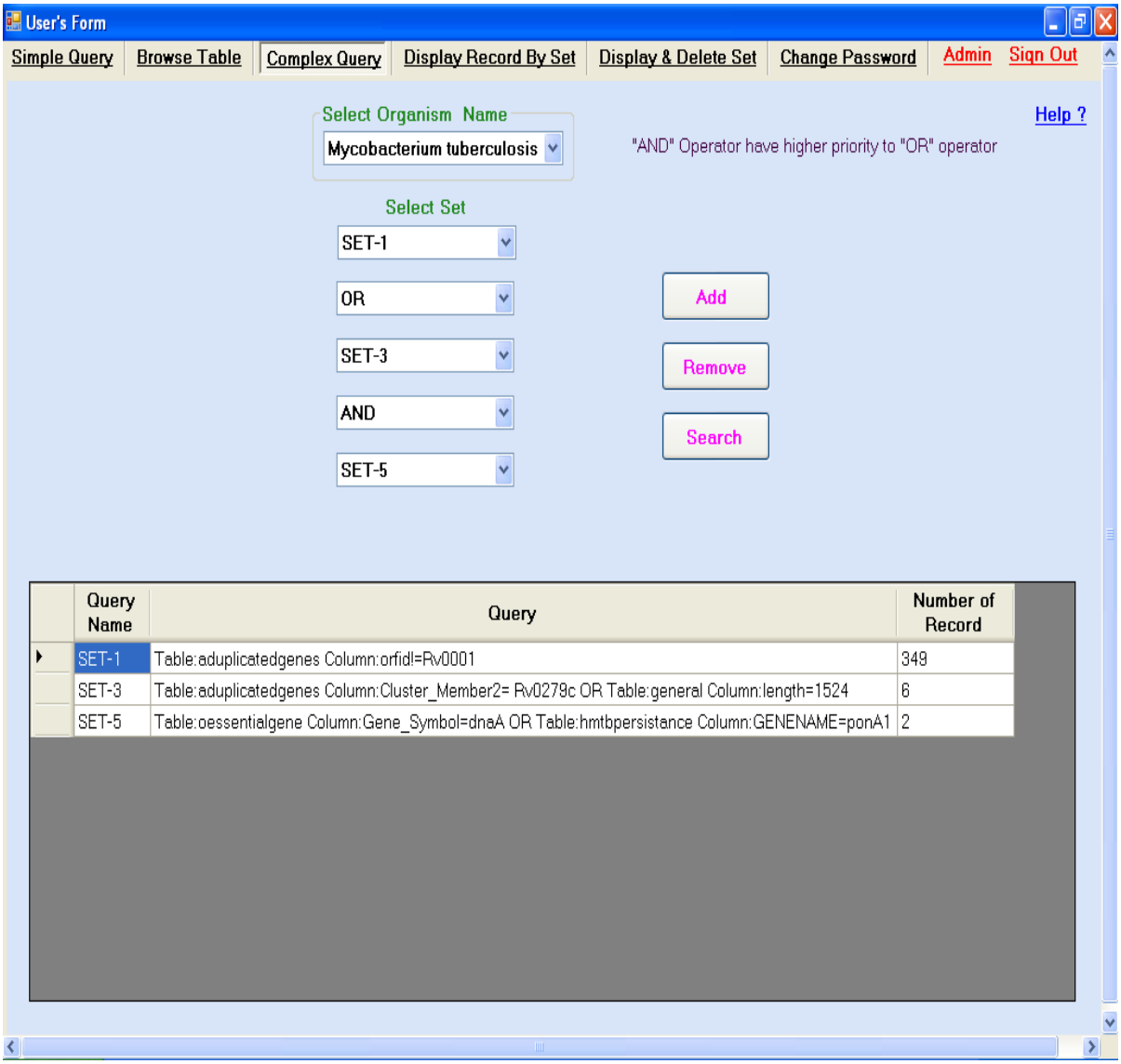
You can increase and decrease width of table's cell, when mouse over on the join of header cell(according to screenshot **orfid** and **Pattern1**) then mouse's hand change to arrow, then mouse drag left or right ,then width of cell will decrease and increase.



3.3 Complex Query

Click on '**Complex Query'** Menu. This window will come. You can merge two or more than two 'SET' into single new 'SET'.

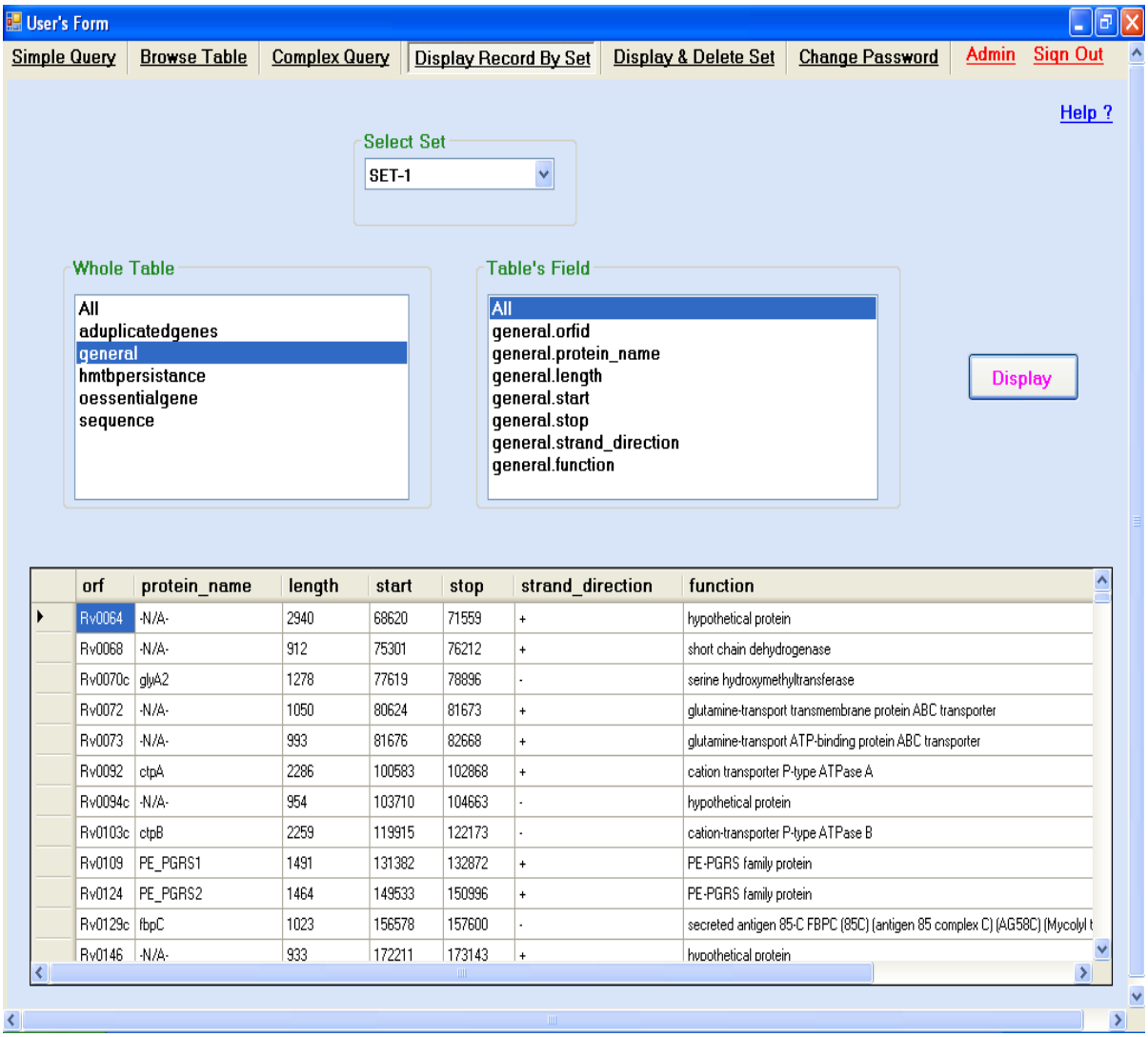
When you want merge two 'SET' then firstly select the organism name. All 'SET' will come in the 'Select Set' dropdown list according to organism name. If you find the record according to two SET then click on the 'Search' button, otherwise merge more 'SET' then click on 'Add' button and so on. New SET is combination of two SET or more than two 'SET'.



3.4 Display Record By Set

Click on the '**Display Record By Set'** Menu. This window will come. When you generate the 'SET' then result come in the form of the '**orf'** for Example Rv0001. you can display record from one or more than one table according to the 'SET'**.**

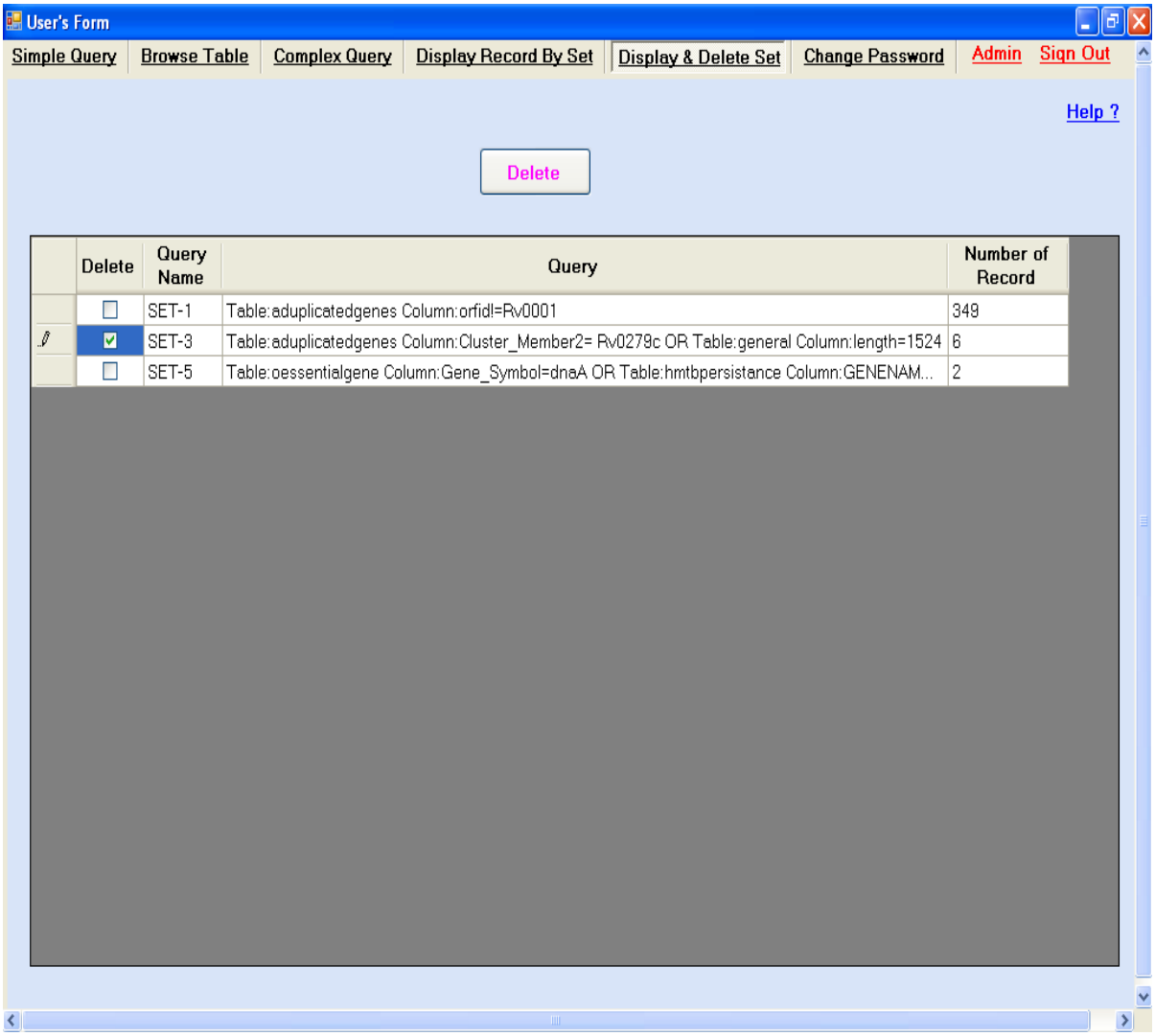
Firstly select the SET then all table come in the 'Whole Table' list box. When you select one or more than one table then table's field come in the 'Table's Field' list box. You can choose the table's field that you want to display and click on the 'Display' button. Table's field come in the below.


User's Form
Simple Query
Browse Table
Complex Query
Display Record By Set
Display & Delete Set
Change Password
Admin
Sign Out
Help ?
Select Set
SET-1
Whole Table
All
aduplicatedgenes
general
hmtbpersistance
oessentialgene
sequence
Table's Field
All
general.orfid
general.protein_name
general.length
general.start
general.stop
general.strand_direction
general.function
Display
orf protein_name length start stop strand_direction function
Rv0064 -N/A- 2940 68620 71559 + hypothetical protein
Rv0068 -N/A- 912 75301 76212 + short chain dehydrogenase
Rv0070c glyA2 1278 77619 78896 - serine hydroxymethyltransferase
Rv0072 -N/A- 1050 80624 81673 + glutamine-transport transmembrane protein ABC transporter
Rv0073 -N/A- 993 81676 82668 + glutamine-transport ATP-binding protein ABC transporter
Rv0092 ctpA 2286 100583 102868 + cation transporter P-type ATPase A
Rv0094c -N/A- 954 103710 104663 - hypothetical protein
Rv0103c ctpB 2259 119915 122173 - cation-transporter P-type ATPase B
Rv0109 PE_PGRS1 1491 131382 132872 + PE-PGRS family protein
Rv0124 PE_PGRS2 1464 149533 150996 + PE-PGRS family protein
Rv0129c fbpC 1023 156578 157600 - secreted antigen 85-C FBPC (85C) (antigen 85 complex C) (AG58C) (Mycolyl t
Rv0146 -N/A- 933 172211 173143 + hypothetical protein

3.5 Display & Delete Set

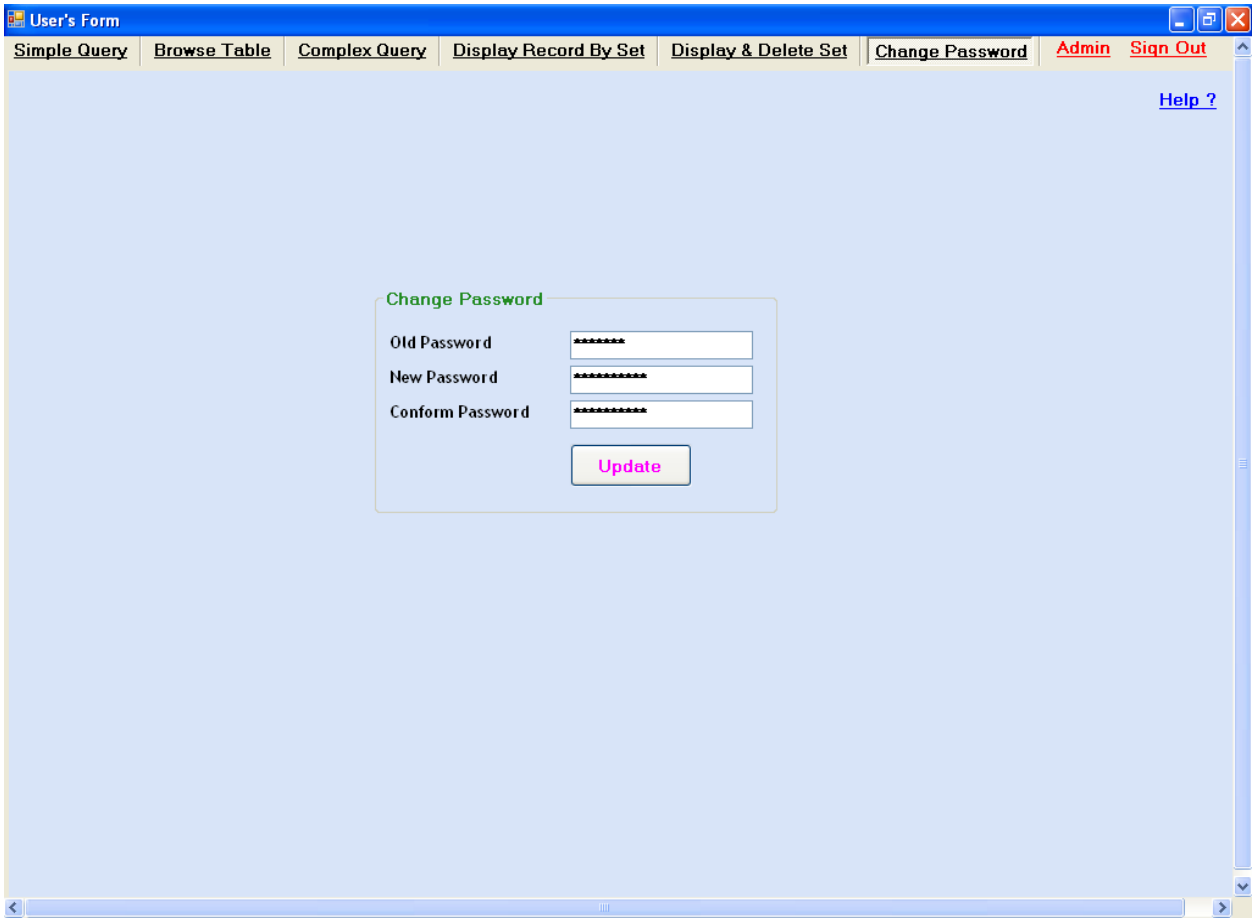
Click on the '**Display & Delete Set'** Menu. This window will come. You can see the details of the 'SET' and delete the 'SET'.

You can delete the 'SET'. When you checked the 'Delete' field and click on the "Delete" button then corresponding 'SET' will be deleted.



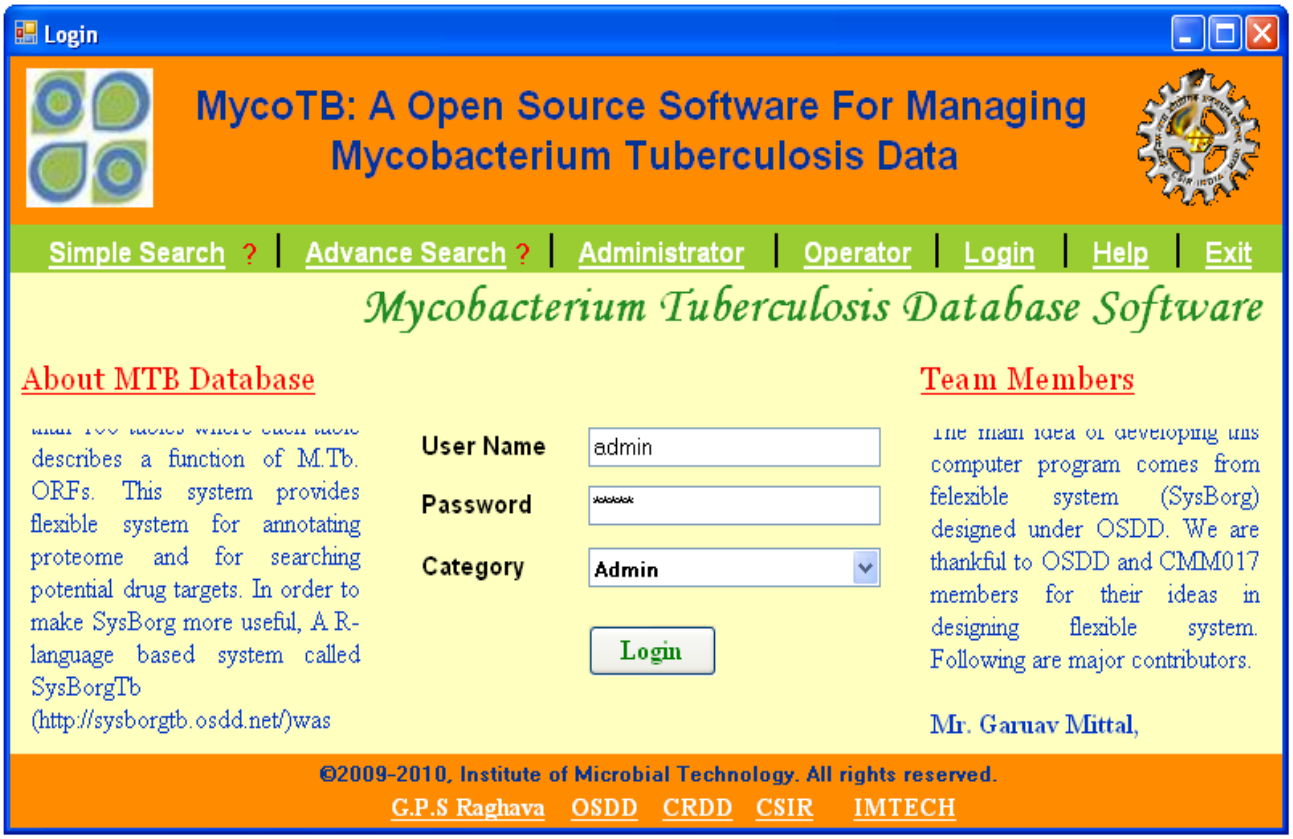
3.6 Change Password

Click on the **'Change Password'** Menu. This window will come. You can change your password.



4 Admin Category

When you click on the **'Login'** Menu. This window will come and Administrator is fill his user name, password and Category and click on the 'Login' button.


Login
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Simple Search ? | Advance Search ? | Administrator | Operator | Login | Help | Exit
Mycobacterium Tuberculosis Database Software
About MTB Database
describes a function of M.Tb. ORFs. This system provides flexible system for annotating proteome and for searching potential drug targets. In order to make SysBorg more useful, A R-language based system called SysBorgTb (http://sysborgtb.osdd.net/)was
User Name
admin
Password
Category
Admin
Login
Team Members
computer program comes from felexible system (SysBorg) designed under OSDD. We are thankful to OSDD and CMM017 members for their ideas in designing flexible system. Following are major contributors.
Mr. Garuav Mittal,
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G.P.S Raghava OSDD CRDD CSIR IMTECH

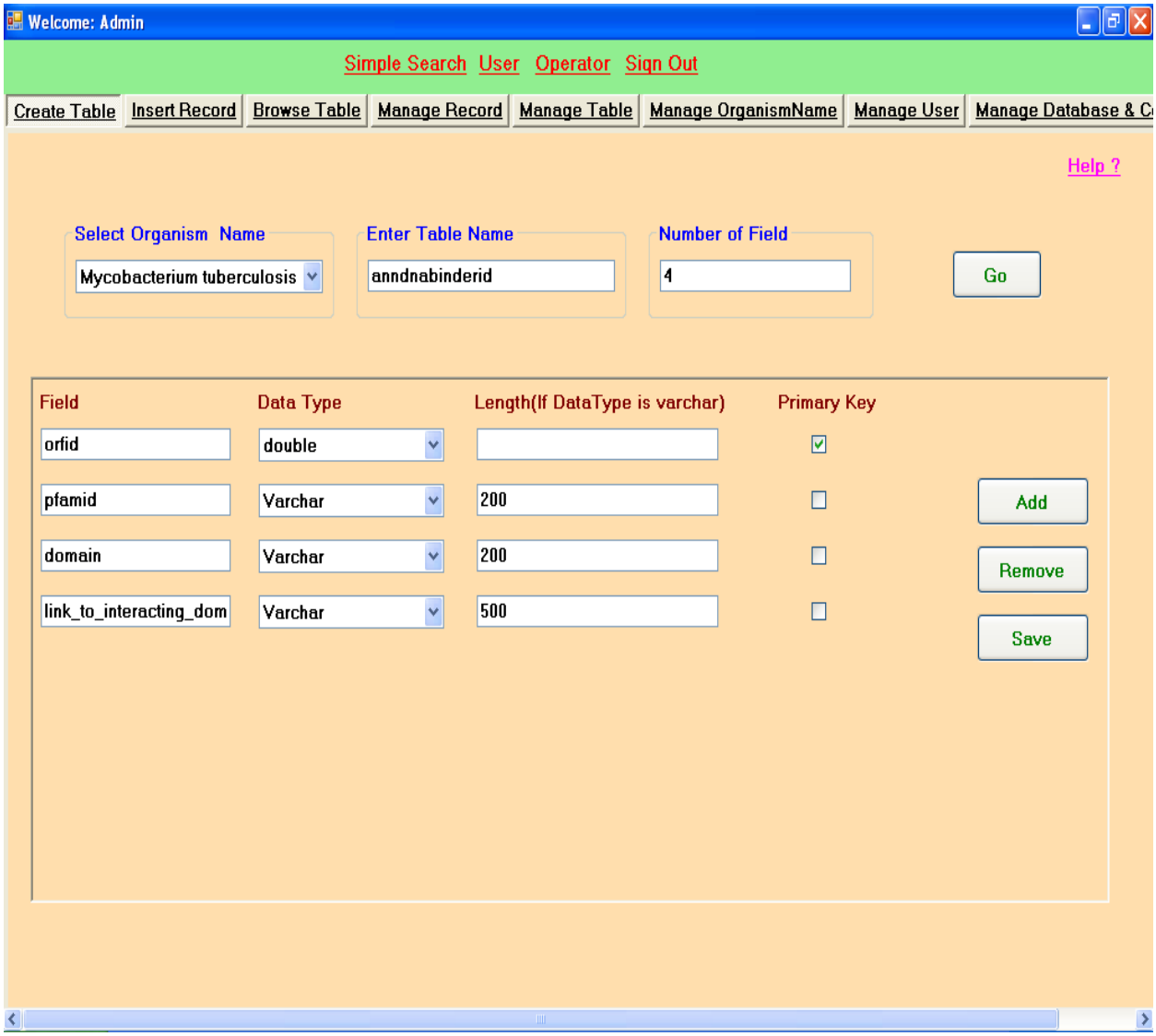
By Default Administrator Name: admin
Password: a4321
Category: Admin

Important:
Admin can change his password when you will do login.

4.1 Create Table

Click on the **'Create Table'** Menu. This window will come. You can create the new table in organism name.

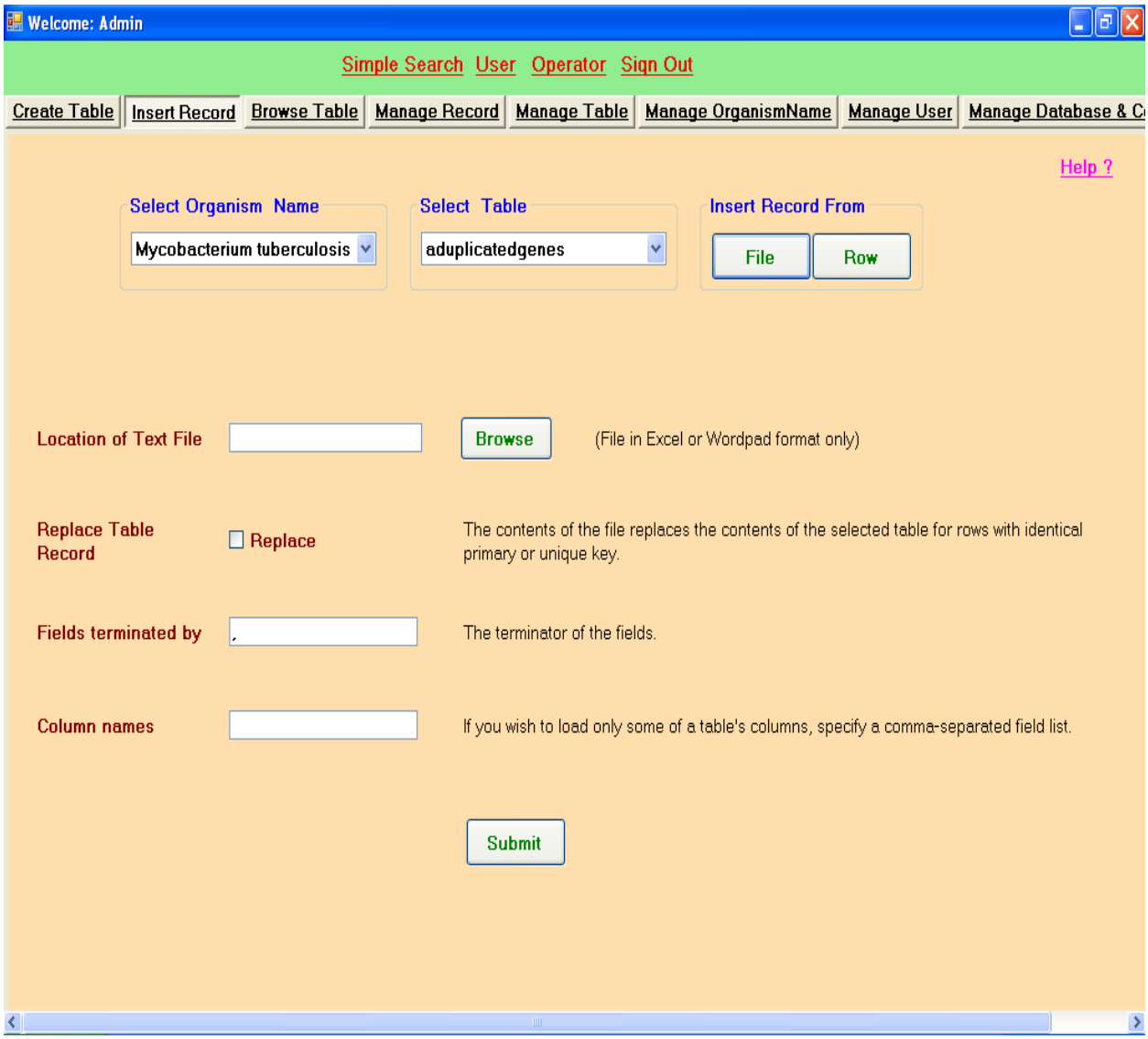
Enter table name and give the number of table's field, click on 'Go' button then give the value of field's name and data type and click on the 'Save' button then table will create.



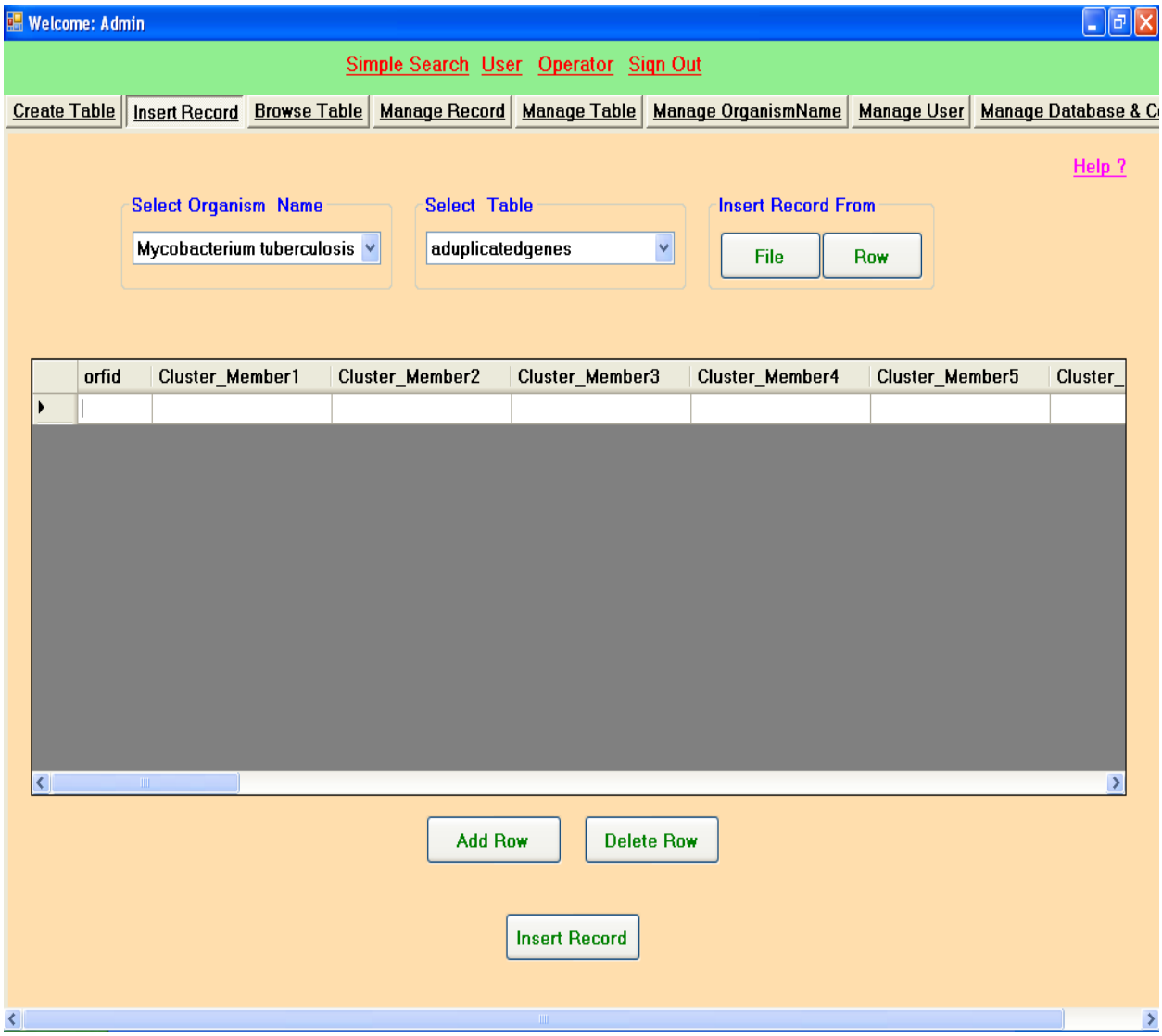
4.2 Insert Record

Click on the **'Insert Record'** Menu. This window will come. You can insert the record in the table by two operation first is file and second is row by row.

If you are insert the record by file. File should be in WordPad or excel format. Select the table name for insert the record and click on the 'File' button. Browse the file by click on the 'Browse' Button. If you want replace the existing data from the table then check the 'Replace' checkbox. Your file has special character between table's fields that special character fill in the "Field terminate by" textbox. If you want to insert the record for particular column then insert the column name and click on the 'Submit' button.



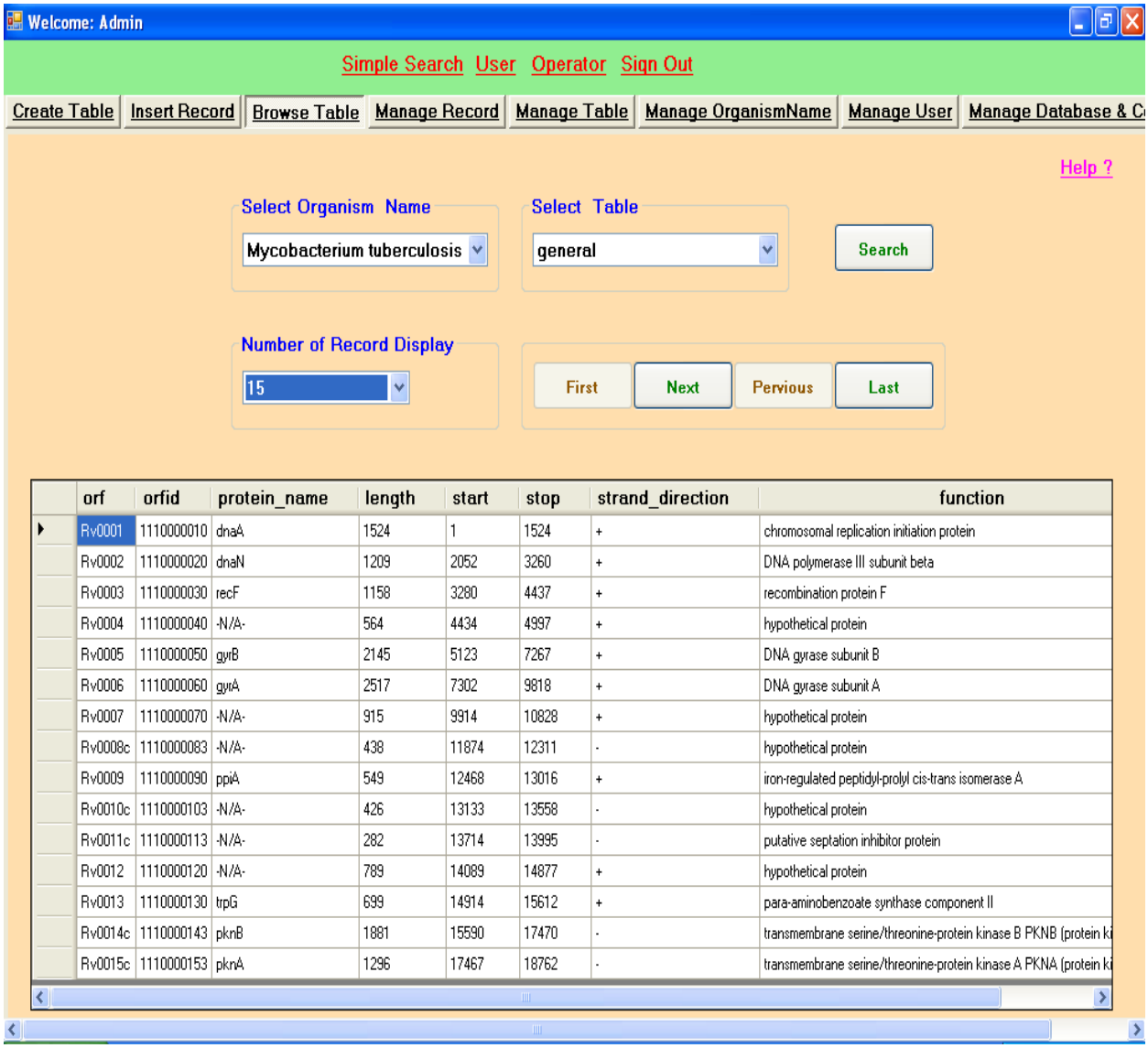
If you are insert the record by row by row. Choose the table name from the 'Select Table' drop down list and click on the 'Row' button then fill the value of table's field. If you want insert another row then click on the 'Add Row' button and fill the value in another row and last click on the 'Insert Record' button.



4.3 Browse Table

Click on the **'Browse Table'** Menu. This window will come. You can display the table's record.

Select the organism name then table will come in 'Select Table' dropdown list then click on the "Search" button. Table's record will come below in table format.

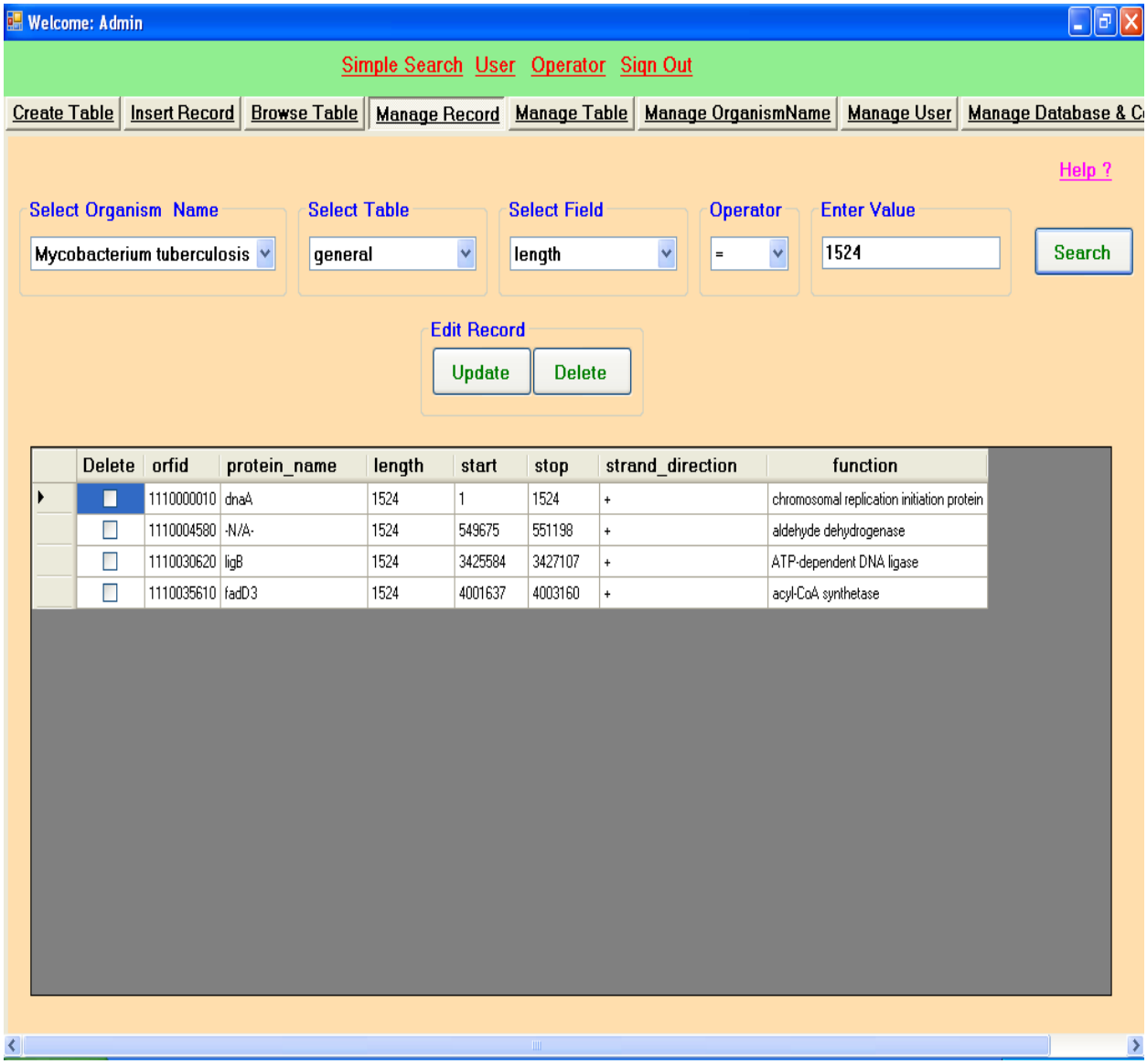


	orf	orfid	protein_name	length	start	stop	strand_direction	function
▶	Rv0001	1110000010	dnaA	1524	1	1524	+	chromosomal replication initiation protein
	Rv0002	1110000020	dnaN	1209	2052	3260	+	DNA polymerase III subunit beta
	Rv0003	1110000030	recF	1158	3280	4437	+	recombination protein F
	Rv0004	1110000040	-N/A-	564	4434	4997	+	hypothetical protein
	Rv0005	1110000050	gyrB	2145	5123	7267	+	DNA gyrase subunit B
	Rv0006	1110000060	gyrA	2517	7302	9818	+	DNA gyrase subunit A
	Rv0007	1110000070	-N/A-	915	9914	10828	+	hypothetical protein
	Rv0008c	1110000083	-N/A-	438	11874	12311	-	hypothetical protein
	Rv0009	1110000090	ppiA	549	12468	13016	+	iron-regulated peptidyl-prolyl cis-trans isomerase A
	Rv0010c	1110000103	-N/A-	426	13133	13558	-	hypothetical protein
	Rv0011c	1110000113	-N/A-	282	13714	13995	-	putative septation inhibitor protein
	Rv0012	1110000120	-N/A-	789	14089	14877	+	hypothetical protein
	Rv0013	1110000130	trpG	699	14914	15612	+	para-aminobenzoate synthase component II
	Rv0014c	1110000143	pknB	1881	15590	17470	-	transmembrane serine/threonine-protein kinase B PKNB (protein ki
	Rv0015c	1110000153	pknA	1296	17467	18762	-	transmembrane serine/threonine-protein kinase A PKNA (protein ki

4.4 Manage Record

Click on the **'Manage Record'** Menu. This window will come. You can update and delete the record in the table.

Firstly search the record for delete or update by click on the 'Search' button then record come in the table's row format. If you want update the record then enter the modify value in the table's row and click on the 'Update' button. If you want delete the record, check the 'Delete' Column's check box and click on the "Delete" button.



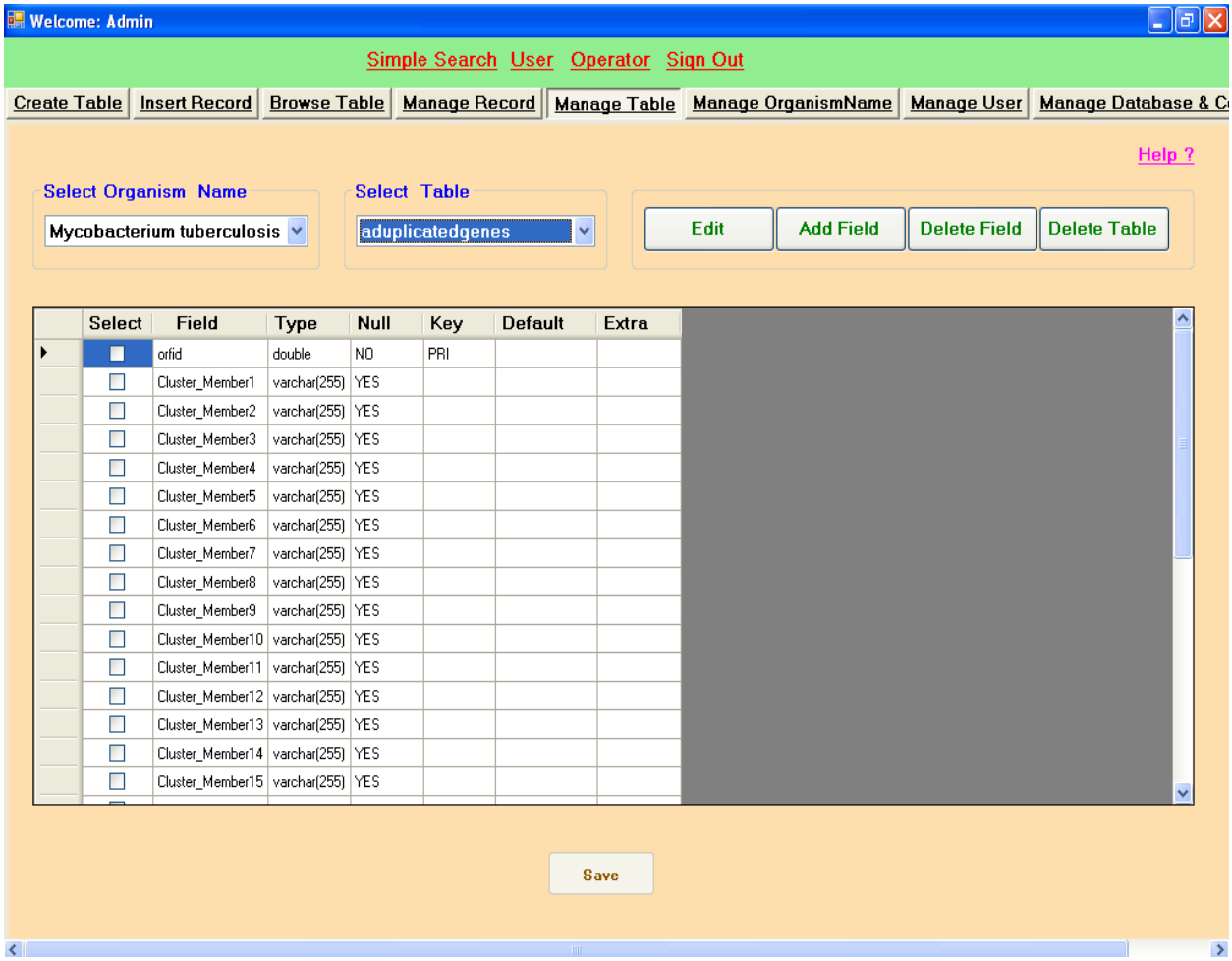
4.5 Manage Table

Click on the **'Manage Table'** Menu. This window will come. You can edit the table's field, insert new field and delete the table from the organism name.

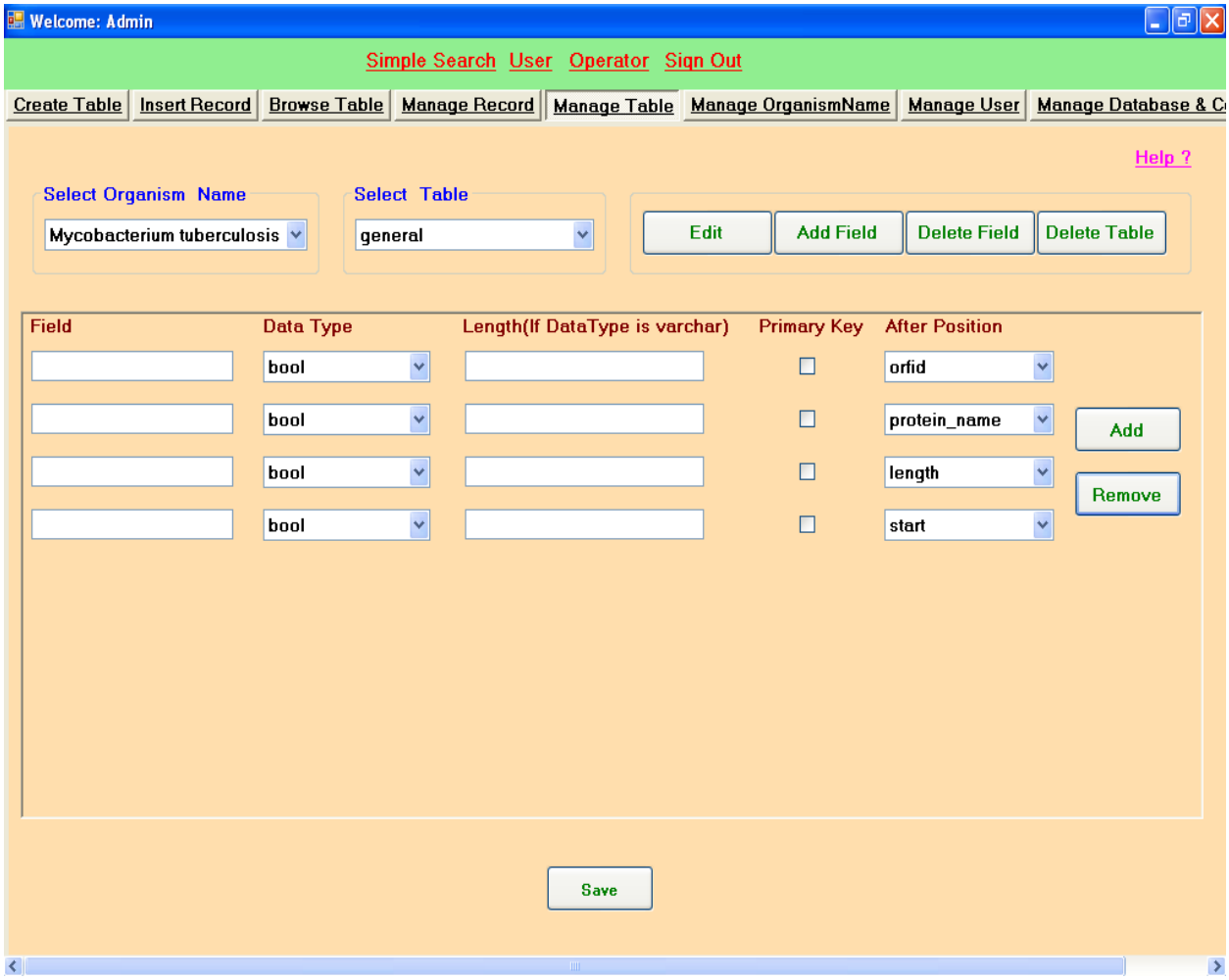
Select the table then table's field come in the below. If you want modify the table's field name or change the 'Type' then check the corresponding table's field by 'Select' column check box and click on the 'Edit' button. Change the table's field or data type and last click on the 'Update' button.

If you want delete the table's field then check the "Select" column check box and click on the 'Delete Field' button.

If you want delete the table from the organism name then select the table and click on the 'Delete Table'.



If you want add new field in the table then click on the ‘Add Field’ button and display this window. Enter the new field value, choose the data type and set the position then click on the ‘Save’ button.

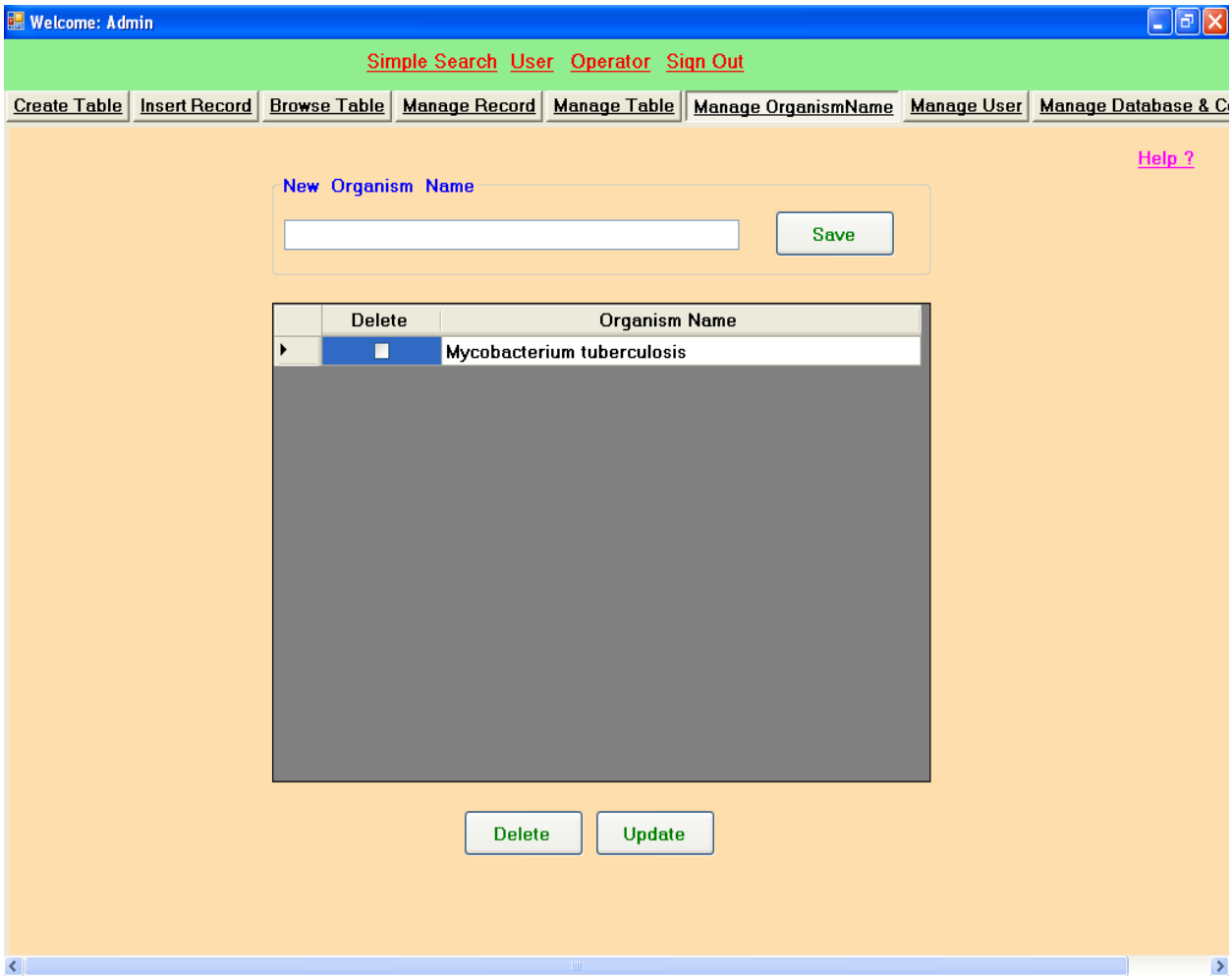


4.6 Manage Organism Name

Click on the '**Manage Organism Name'** Menu. This window will come. You can insert new organism name and edit the existing organism name.

If you want insert new organism name in the database then enter the new organism name in the 'New Organism Name' text box and click on the 'Save' button. New organism name is come in the below table list.

You can edit the organism name when you select the organism name and type new organism name and click on the 'Update' button. You can delete the existing organism name. When check the 'Delete' column check box and click on the 'Delete' button.



4.7 Manage User

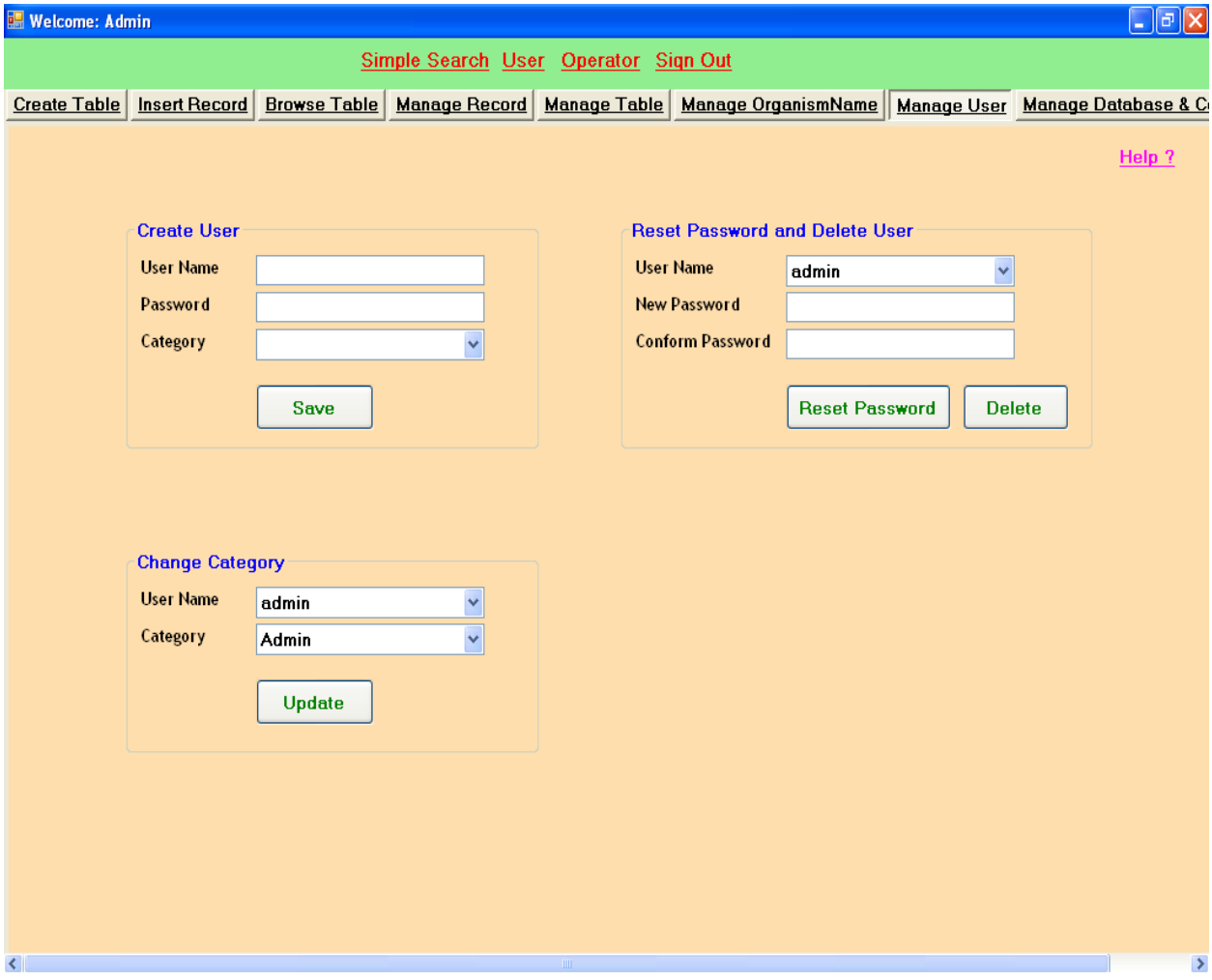
Click on the '**Manage User'** Menu. This window will come. You can create new user, delete existing user, reset the password of existing user and change the category of the existing user.

If you want create the new user then enter the new user name in the 'Creat User' Box and enter the password and select the category for the user and last click on the 'Save'.

If you want reset the password of existing user then select the user name from the 'Reset Password' box and enter the new password and conform password and last click on the 'Reset Password'.

If you want delete the existing user then select the user name and click on the 'Delete' button.

If you want the change the category of user then select the user name from the 'Change Category' box and select the another category and last click on the 'Update' button.



4.8 Manage Database & Connection

When click on the **'Manage Database & Connection'** Menu. You can take the backup of mtb database from the web server and restore database in the local wamp server. You can update the connection information.

You can switch the connection to web server or local wamp server, if you have server name or ip address, user name and password. If you want stable connection to the web server then fill the some information such as

Server Name (IP): 172.141.121.22
User Name: mtb
Password: Mtbimt22

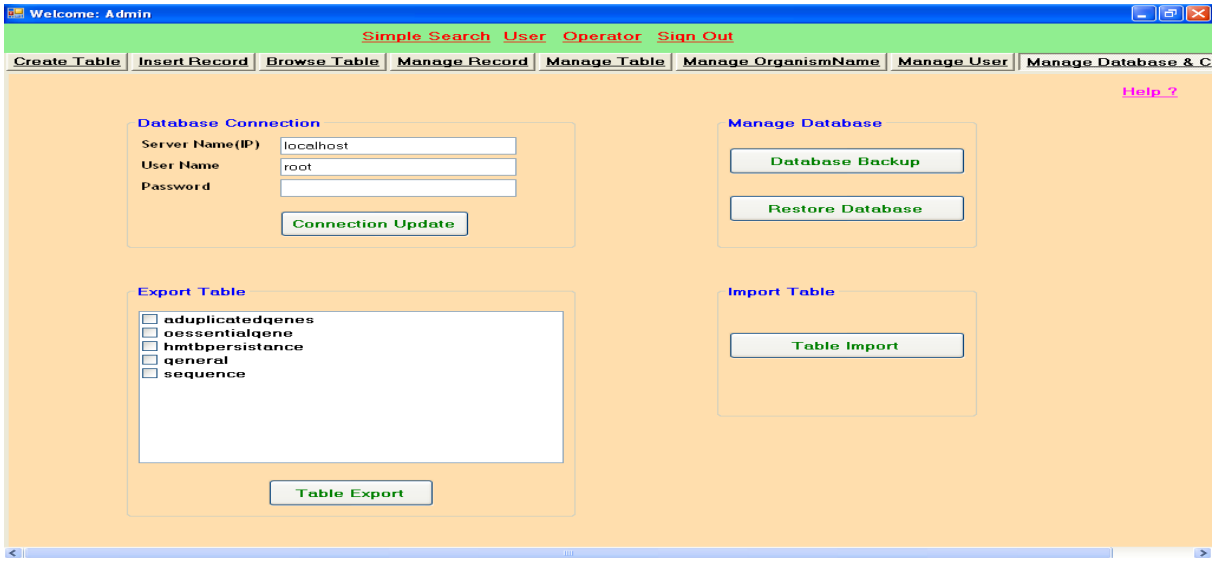
If you want stable the connection to local wamp server then fill the some information such as
Server Name (IP): localhost
User Name: root
Password:
And last click on the 'Connection Update' button.

If you want take the mtb database backup from the web server then firstly your connection is stables from the web server (see above connection update) then after click on the 'Database Backup' button and dialog box will come for saving the database file location. You give the backup file name and click on the "save" button. Then your database will successfully backup.

If you want restore backup database in the local wamp server then click on the 'Restore Database' button and dialog will come and double click on the database backup file.

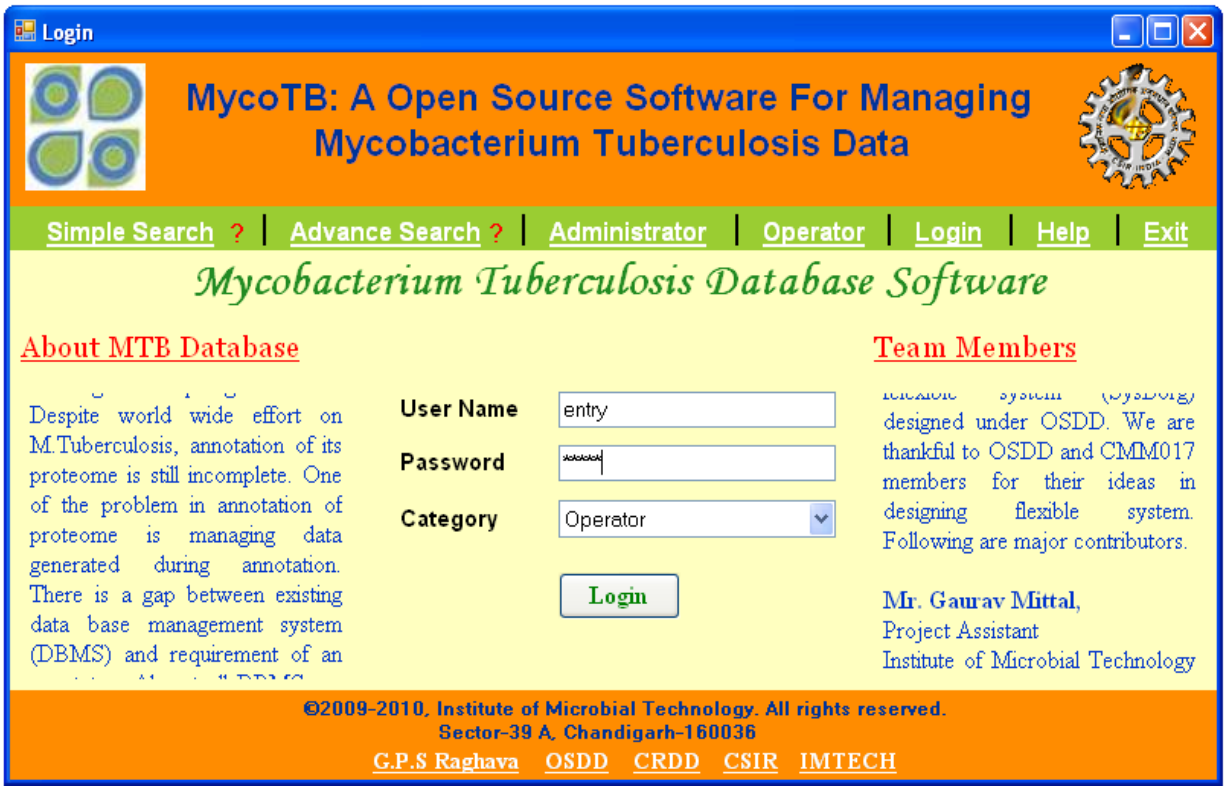
If you want export the tables then check the table and click on the 'Table Export' button. After this dialog box will open for saving the file. You can give the file name and click on the 'save' button.

If you want import the tables then click on the 'Table Import' button. After this dialog box will open for taking the file's path. You can select the file and click on the 'open' button.



5 Operator Category

When you click on the **'Login'** Menu. This window will come and Operator can fill his user name, password and Category and click on the 'Login' button.


Login
MycoTB: A Open Source Software For Managing Mycobacterium Tuberculosis Data
Simple Search ? | Advance Search ? | Administrator | Operator | Login | Help | Exit
Mycobacterium Tuberculosis Database Software
About MTB Database
Despite world wide effort on M.Tuberculosis, annotation of its proteome is still incomplete. One of the problem in annotation of proteome is managing data generated during annotation. There is a gap between existing data base management system (DBMS) and requirement of an
User Name
entry
Password
Category
Operator
Login
Team Members
designed under OSDD. We are thankful to OSDD and CMM017 members for their ideas in designing flexible system. Following are major contributors.
Mr. Gaurav Mittal,
Project Assistant
Institute of Microbial Technology
©2009-2010, Institute of Microbial Technology. All rights reserved.
Sector-39 A, Chandigarh-160036
G.P.S Raghava OSDD CRDD CSIR IMTECH

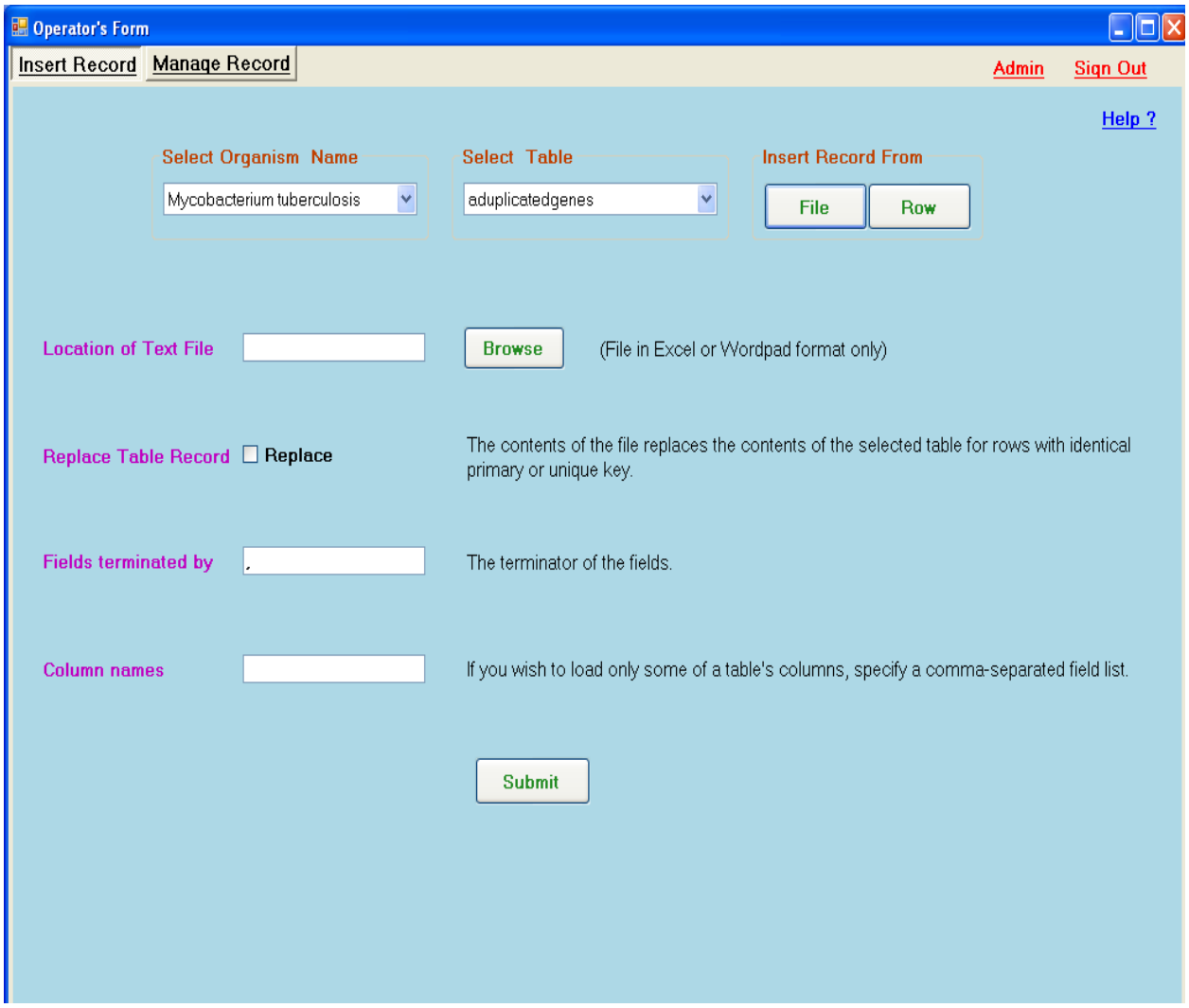
By Default Operator Name: entry
Password: e4321
Category: Operator

Important:
Admin can change his password when you will do login.

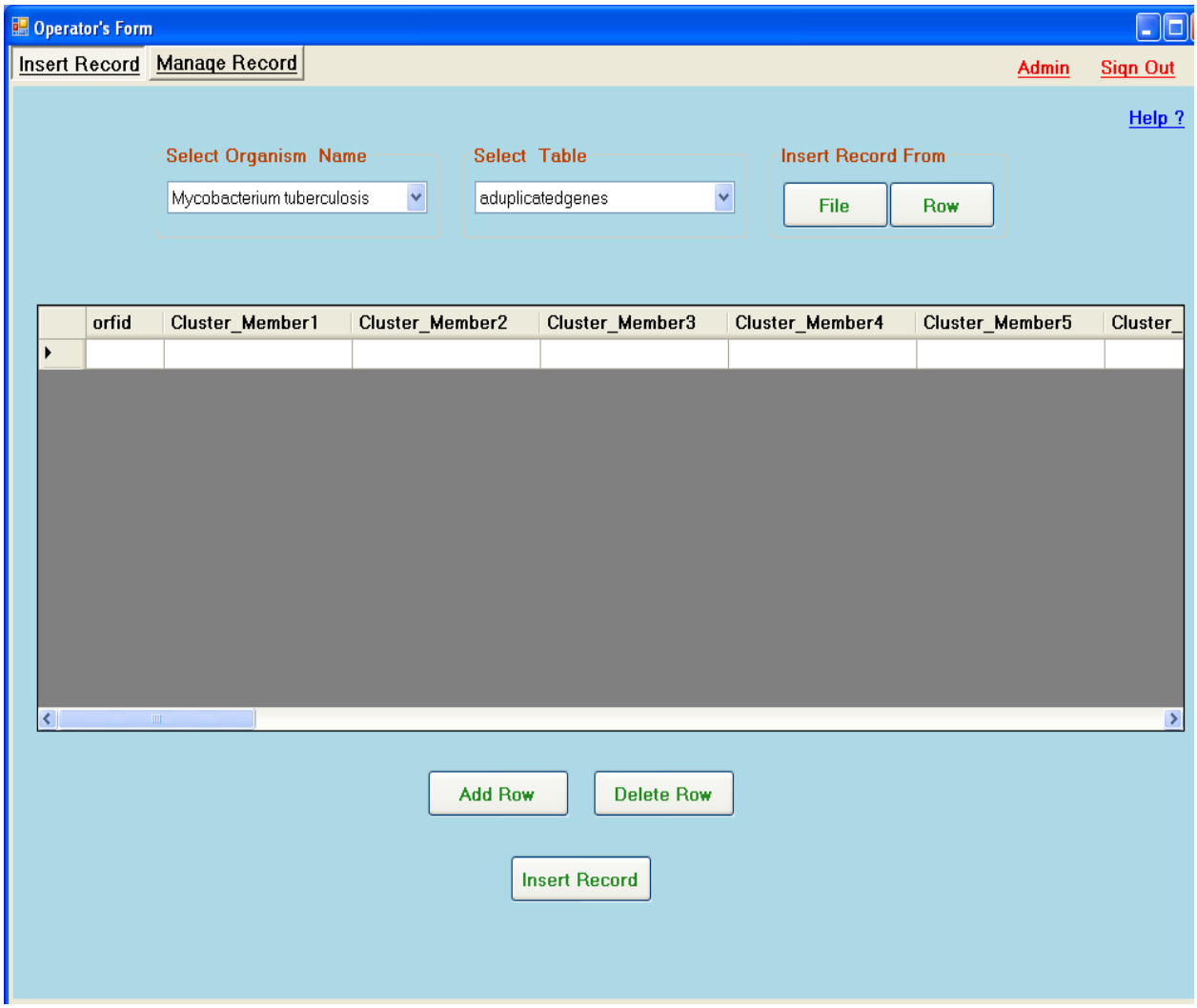
5.1 Insert Record

Click on the **'Insert Record'** Menu. This window will come. You can insert the record in the table by two operation first is file and second is row by row.

If you are insert the record by file. File should be in WordPad or excel format. Select the table name for insert the record and click on the 'File' button. Browse the file by click on the 'Browse' Button. If you want replace the existing data from the table then check the 'Replace' checkbox. Your file has special character between table's fields that special character fill in the "Field terminate by" textbox. If you want to insert the record for particular column then insert the column name and click on the 'Submit' button.



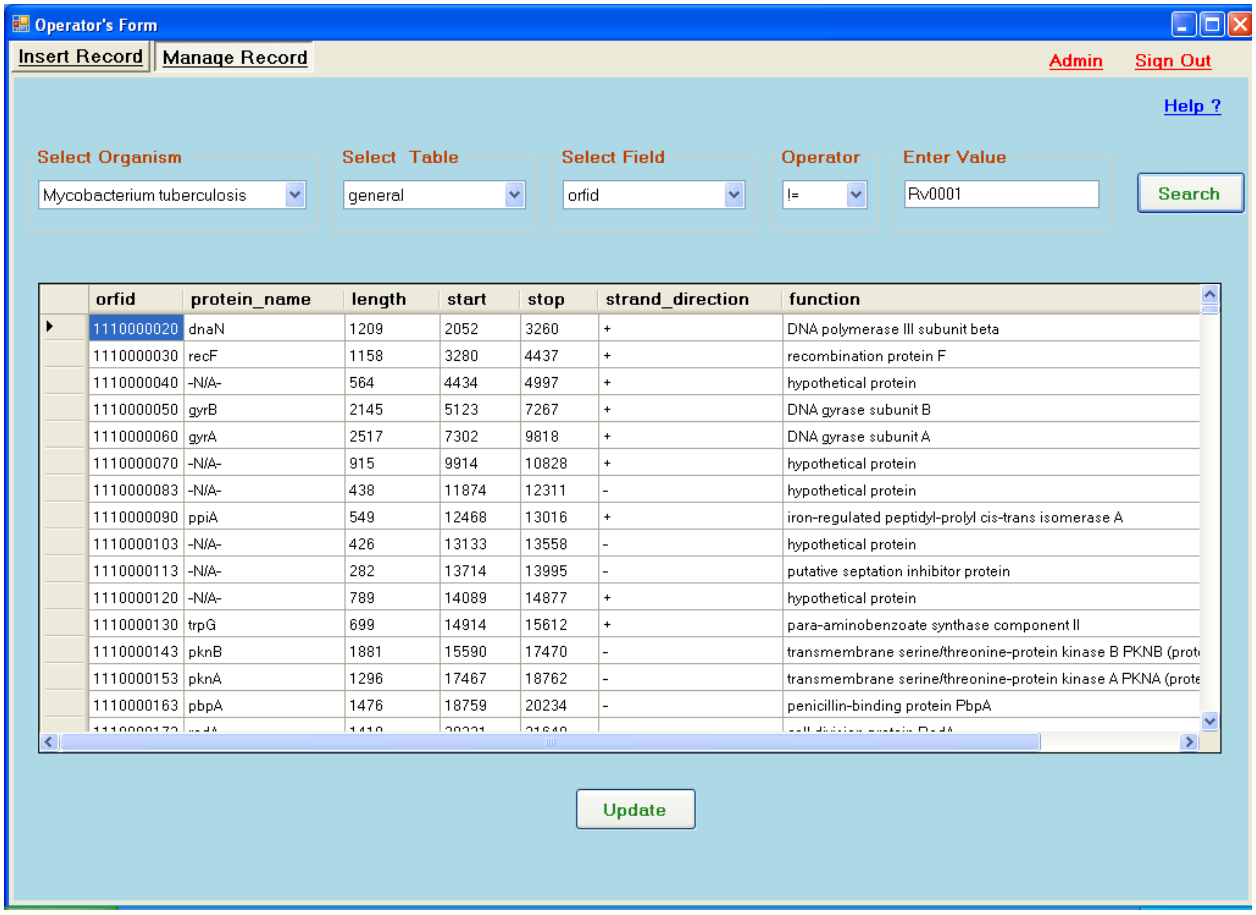
If you are insert the record by row by row. Choose the table name from the ‘Select Table’ drop down list and click on the ‘Row’ button then fill the value of table’s field. If you want insert another row then click on the ‘Add Row’ button and fill the value in another row and last click on the ‘Insert Record’ button.



5.2 Manage Record

Click on the **'Manage Record'** Menu. This window will come. You can update and delete the record in the table.

Firstly search the record for delete or update by click on the 'Search' button then record come in the table's row format. If you want update the record then enter the modify value in the table's row and click on the 'Update' button. If you want delete the record, check the 'Delete' Column's check box and click on the "Delete" button.


Operator's Form
Insert Record
Manage Record
Admin
Sign Out
Help ?
Select Organism
Mycobacterium tuberculosis
Select Table
general
Select Field
orfid
Operator
!=
Enter Value
Rv0001
Search
orfid protein_name length start stop strand_direction function
1110000020 dnaN 1209 2052 3260 + DNA polymerase III subunit beta
1110000030 recF 1158 3280 4437 + recombination protein F
1110000040 -N/A- 564 4434 4997 + hypothetical protein
1110000050 gyrB 2145 5123 7267 + DNA gyrase subunit B
1110000060 gyrA 2517 7302 9818 + DNA gyrase subunit A
1110000070 -N/A- 915 9914 10828 + hypothetical protein
1110000083 -N/A- 438 11874 12311 - hypothetical protein
1110000090 ppiA 549 12468 13016 + iron-regulated peptidyl-prolyl cis-trans isomerase A
1110000103 -N/A- 426 13133 13558 - hypothetical protein
1110000113 -N/A- 282 13714 13995 - putative septation inhibitor protein
1110000120 -N/A- 789 14089 14877 + hypothetical protein
1110000130 trpG 699 14914 15612 + para-aminobenzoate synthase component II
1110000143 pknB 1881 15590 17470 - transmembrane serine/threonine-protein kinase B PKNB (prot
1110000153 pknA 1296 17467 18762 - transmembrane serine/threonine-protein kinase A PKNA (prote
1110000163 pbpA 1476 18759 20234 - penicillin-binding protein PbpA
Update

5.3 Change Password

Click on the **'Change Password'** Menu. This window will come. You can change your password.